

Appendix V4-7B

Summary of Chemical Soil Data Collected
in 2010 and 2014



Appendix V4-7B. Summary of Chemical Soil Data Collected in 2010 and 2014

Sample ID	D06 (0-10)	D06 (10-20)	D10 (0-10)	D10 (10-20)	D20 (0-10)	D20 (10-20)	D21 (0-10)	D21 (10-20)	D29 (0-10)	D29 (10-20)	D32 (0-10)
Date Sampled	15-AUG-10	15-AUG-10	15-AUG-10	15-AUG-10	16-AUG-10	16-AUG-10	16-AUG-10	16-AUG-10	17-AUG-10	17-AUG-10	17-AUG-10
ALS Sample ID	L929006-1	L929006-2	L929006-3	L929006-4	L929006-5	L929006-6	L929006-7	L929006-8	L929006-9	L929006-10	L929006-11
Physical Tests											
pH	6.09	6.69	6.13	7.05	7.35	7.67	5.17	5.56	6.45	6.17	5.09
Total Organic Carbon	1.36	0.71	0.6	0.2	11.1	4.25	3.74	2.25	4.08	3.43	1.02
Metals (mg/kg dry weight)											
Aluminum	15200	14300	7230	7250	10300	12200	21100	19500	18600	20900	8640
Antimony	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic	<5.0	<5.0	<5.0	5.6	<5.0	<5.0	<5.0	<5.0	<5.0	5.2	<5.0
Barium	82.7	76.2	21.8	29.2	81.4	39.7	112	107	100	121	39.7
Beryllium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.64	0.59	0.53	0.58	<0.50
Bismuth	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cadmium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium	3040	3170	1780	2120	11100	7590	3760	3630	9020	7320	2270
Chromium	47.6	48.1	23.8	22.1	81.8	74.5	62.8	58.6	51.8	60.6	26.2
Cobalt	9.8	11.9	7.9	8.3	16.7	17.1	11.4	10.1	10.3	12.9	6.1
Copper	20.1	16.9	21.3	31.4	38.2	67.7	25.4	24.4	28.4	31	12.1
Iron	23200	23800	15100	15100	23600	26700	29000	27400	25500	30500	15300
Lead	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium	21.8	21.9	9.7	10	10	16.4	30.5	29.2	26.9	31.1	12.7
Magnesium	8480	7980	4710	4790	7790	10700	10900	10200	10000	11700	5280
Manganese	243	340	212	192	790	619	255	225	358	368	132
Mercury	0.0094	<0.0050	0.0069	<0.0050	0.0543	0.0155	0.0159	0.01	0.0263	0.0141	0.0056
Molybdenum	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel	24.7	25.2	15.2	16	53.5	48.3	31.1	28.6	26.2	32.5	14.6
Phosphorus	395	413	235	269	715	321	602	552	536	516	478
Potassium	2950	2520	550	820	1110	1160	4390	3930	3330	3790	1220
Selenium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	480	310	<200	<200	<200	<200	510	480	1030	730	240
Strontium	21.3	19.5	8.21	9.02	33.3	23.4	30	28	36.4	29.8	13
Thallium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Titanium	1180	1060	509	527	351	746	1440	1340	1210	1400	584
Uranium	1.37	1.32	0.297	0.37	0.378	0.774	1.63	1.62	1.03	1.47	0.748
Vanadium	51.2	50.9	32	32.8	46.3	50.3	64.3	60.2	53.8	64.6	31.8
Zinc	44.7	39.7	25.3	30.1	47.1	46.5	54.2	50.4	55.8	60.9	28.9

Notes:

(-) = not available

Appendix V4-7B. Summary of Chemical Soil Data Collected in 2010 and 2014

Sample ID	D32 (10-20)	D38 (0-10)	D38 (10-20)	D43 (0-10)	D43 (10-20)	D54 (0-10)	D54 (10-20)	D57 (0-10)	D57 (10-20)	D59 (0-10)	D59 (10-20)
Date Sampled	17-AUG-10	19-AUG-10	19-AUG-10	19-AUG-10	19-AUG-10	21-AUG-10	21-AUG-10	21-AUG-10	21-AUG-10	22-AUG-10	22-AUG-10
ALS Sample ID	L929006-12	L929006-13	L929006-14	L929006-15	L929006-16	L929006-17	L929006-18	L929006-19	L929006-20	L929006-21	L929006-22
Physical Tests											
pH	5.44	5.17	5.69	7.15	7.64	5.28	5.79	5.91	6.16	6.7	7.05
Total Organic Carbon	1.09	0.71	0.19	4.2	3.21	19.3	36.4	4.77	2.4	0.53	0.26
Metals (mg/kg dry weight)											
Aluminum	8250	3380	3630	16400	16000	626	2390	17400	19700	5000	3680
Antimony	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium	44	12.8	15.4	93	102	36	48.4	116	136	22.4	21.7
Beryllium	<0.50	<0.50	<0.50	0.56	0.53	<0.50	<0.50	0.56	0.63	<0.50	<0.50
Bismuth	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cadmium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium	2120	984	1270	9410	9000	11700	14000	4610	4580	2470	2410
Chromium	25.7	8.2	9.6	45.7	43.6	<2.0	5.8	53	62.4	17.5	13.8
Cobalt	5.2	2.7	3.6	9.4	8.9	3.6	5.8	11.5	13.2	6.2	4.9
Copper	13.8	2.5	3.7	16.5	21.8	5.6	9.1	23.8	26.5	22.1	16.2
Iron	13100	7800	8610	22800	21900	4080	25200	25500	30300	10700	8910
Lead	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium	12.5	5.1	6	27.3	26.2	<2.0	<2.0	26.2	31.8	8.6	5.7
Magnesium	4810	2040	2320	9550	9200	2530	2100	10100	11500	3740	2370
Manganese	116	68.3	84.3	248	246	226	112	308	337	108	83.8
Mercury	0.0082	<0.0050	<0.0050	0.0175	0.0108	0.158	0.0695	0.0165	0.0091	<0.0050	<0.0050
Molybdenum	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel	14.1	<5.0	5.3	24.3	23.5	<5.0	15.1	28.1	34.4	15.2	10.5
Phosphorus	456	125	211	406	356	674	943	591	607	325	363
Potassium	1280	380	410	3960	3140	830	<200	4370	4840	540	490
Selenium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	250	<200	<200	630	640	540	380	530	450	<200	<200
Strontium	12.5	5.88	6.67	79.9	77.3	54.3	61.9	31.4	31.5	8.52	8.67
Thallium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Titanium	527	335	344	996	945	18.7	64.4	1200	1250	381	357
Uranium	0.735	0.249	0.332	0.837	0.988	<0.050	0.219	1.88	1.97	0.345	0.38
Vanadium	29.2	19.1	20.9	47.2	47.2	<2.0	9.4	57.3	64.9	23.7	20.9
Zinc	30.6	10.7	11.6	51	48.6	26.5	9	50.9	59.1	18.4	15.5

Notes:

(-) = not available

Appendix V4-7B. Summary of Chemical Soil Data Collected in 2010 and 2014

Sample ID	D61 (0-10)	D61 (10-20)	D70 (0-10)	D70 (10-20)	D72 (0-10)	D72 (10-20)	D76 (0-10)	D76 (10-20)	D108 (0-10)	D108 (10-20)	D109 (0-10)
Date Sampled	22-AUG-10	22-AUG-10	23-AUG-10	23-AUG-10	24-AUG-10	24-AUG-10	24-AUG-10	24-AUG-10	27-AUG-10	27-AUG-10	27-AUG-10
ALS Sample ID	L929006-23	L929006-24	L929006-25	L929006-26	L929006-27	L929006-28	L929006-29	L929006-30	L929006-31	L929006-32	L929006-33
Physical Tests											
pH	6.26	6.3	6.03	6.15	4.53	5.09	4.96	5.67	5.68	5.6	5.48
Total Organic Carbon	5.92	1.26	2.76	1.68	2.59	2.54	3.27	1.64	5.64	4.31	42.1
Metals (mg/kg dry weight)											
Aluminum	14200	11200	3580	3810	16600	16600	16700	8450	10200	9060	907
Antimony	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium	77.1	60	21.3	20.5	73.1	81.9	102	52.6	30.2	30.3	24
Beryllium	<0.50	<0.50	<0.50	<0.50	<0.50	0.51	<0.50	<0.50	<0.50	<0.50	<0.50
Bismuth	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cadmium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium	6190	4210	1800	1740	3280	3150	2550	2260	3560	4940	4630
Chromium	41.3	34.7	9	9	47.1	47.9	39.9	22.8	24.3	23.7	<2.0
Cobalt	7.2	6.6	<2.0	<2.0	6.4	6.6	8.4	5	9	6.4	<2.0
Copper	13	12.6	5.9	4.7	28.6	30.4	26.2	12.7	20.9	23.7	4.3
Iron	19700	17300	6690	5160	19400	19200	22900	13800	18400	17100	1200
Lead	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium	21.8	18.3	6.4	7	18.8	20	21.9	12.6	14.6	7	<2.0
Magnesium	7990	6340	1650	1810	6430	6590	7200	4210	5460	3400	1100
Manganese	240	182	41.5	44.8	135	130	147	108	327	201	10.4
Mercury	0.0201	0.0059	0.0099	<0.0050	0.0193	0.0116	0.0206	0.0065	0.0504	0.062	0.104
Molybdenum	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel	20	16	<5.0	<5.0	17.4	18	20.8	10.9	15.9	12.8	<5.0
Phosphorus	490	579	326	386	531	473	412	405	425	770	530
Potassium	2890	2640	230	230	1810	1680	3110	1710	410	370	440
Selenium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	510	380	210	<200	290	250	290	220	<200	<200	<200
Strontium	32	24.8	8.51	7.89	27.4	23.8	21.5	15.1	16.2	19.3	29.3
Thallium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Titanium	815	740	235	283	1080	992	977	646	719	454	36.4
Uranium	1.1	1.27	0.344	0.393	1.63	1.71	1.12	0.79	0.428	0.798	0.062
Vanadium	43.3	40.3	15.1	13.3	50.6	50.3	46	30.1	36	30.7	2.5
Zinc	57.3	33.7	9.6	8.9	34.6	35.4	46.3	22.9	38.6	26.7	17.3

Notes:

(-) = not available

Appendix V4-7B. Summary of Chemical Soil Data Collected in 2010 and 2014

Sample ID	D109 (10-20)	D96 (0-10)	D96 (10-20)	D99 (0-10)	D99 (10-20)	D82 (0-10)	D82 (10-20)	D88 (0-10)	D88 (10-20)	D65 (0-10)	D65 (10-20)
Date Sampled	27-AUG-10	26-AUG-10	26-AUG-10	26-AUG-10	26-AUG-10	25-AUG-10	25-AUG-10	25-AUG-10	25-AUG-10	23-AUG-10	23-AUG-10
ALS Sample ID	L929006-34	L929006-35	L929006-36	L929006-37	L929006-38	L929006-39	L929006-40	L929006-41	L929006-42	L929006-43	L929006-44
Physical Tests											
pH	4.13	4.4	6.35	6.53	6.4	5.9	5.95	5.3	5.87	5.56	4.92
Total Organic Carbon	34.1	0.5	0.2	1.45	1.49	0.76	1.61	0.77	0.25	0.24	3.83
Metals (mg/kg dry weight)											
Aluminum	6910	2390	2300	16300	16600	3030	3480	3280	2910	2650	3670
Antimony	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium	33.7	9.3	9.5	104	105	17.8	23.1	18.3	19.1	16.6	18.1
Beryllium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Bismuth	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cadmium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium	2760	1110	1200	4250	4470	1620	1930	1270	1310	1440	1340
Chromium	14.5	6.5	6.5	46.3	47.3	11.1	10.6	8.5	8.2	8.8	12
Cobalt	2.3	<2.0	<2.0	8.8	10.2	2.2	2.6	2.7	3	<2.0	2.6
Copper	4.9	1.6	1.3	18.8	17.7	4.4	7	5.7	18.4	5.2	4.8
Iron	9750	4620	4700	23100	22800	7960	8310	7500	7100	6310	7460
Lead	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium	2.7	4	3.8	21.1	22	5.3	5.5	6.5	4.9	4.6	5.2
Magnesium	1390	1380	1400	7720	8000	1760	1920	2000	1740	1620	2450
Manganese	24.9	59.7	47.1	202	249	56.4	63.8	59.5	62.3	48.8	57.9
Mercury	0.0442	<0.0050	<0.0050	0.0079	0.009	<0.0050	0.0071	<0.0050	<0.0050	<0.0050	0.0129
Molybdenum	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel	8.1	<5.0	<5.0	21.6	21.7	<5.0	<5.0	<5.0	<5.0	<5.0	5.4
Phosphorus	735	193	216	523	559	292	280	203	259	360	267
Potassium	590	270	250	3850	3970	510	420	520	470	420	530
Selenium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	<200	<200	<200	370	380	<200	<200	<200	<200	<200	<200
Strontium	23.5	5.01	5.08	25.2	26.4	7.27	8.89	6.86	6.12	6.58	8.22
Thallium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Titanium	260	165	187	1210	1230	348	357	357	279	231	377
Uranium	0.609	0.219	0.218	1.22	1.21	0.397	0.453	0.392	0.324	0.422	0.344
Vanadium	14.6	9.9	10.2	53.2	54.2	19.4	20	16.4	14.9	14.3	17.5
Zinc	10.6	9.7	7.3	46.2	48.4	8.8	9.8	9.9	8.3	7.8	11.2

Notes:

(-) = not available

Appendix V4-7B. Summary of Chemical Soil Data Collected in 2010 and 2014

Sample ID	D119 (0-10)	D119 (10-20)	D122 (0-10)	D122 (10-20)	D132 (0-10)	D132 (10-20)	8 (0-10)	8 (10-20)	13 (0-10)	13 (10-20)	14 (0-10)
Date Sampled	28-AUG-10	28-AUG-10	28-AUG-10	28-AUG-10	29-AUG-10	29-AUG-10	12-Jul-10	12-Jul-10	14-Jul-10	14-Jul-10	15-Jul-10
ALS Sample ID	L929006-45	L929006-46	L929006-47	L929006-48	L929006-49	L929006-50	L933907-1	L933907-2	L933907-3	L933907-4	L933907-5
Physical Tests											
pH	5.08	5.5	5.02	5.94	5.09	6.17	6.03	6.22	5.7	6.05	6.63
Total Organic Carbon	0.46	0.49	2.42	2.71	1.67	0.43	2.07	3.85	0.22	<0.10	1.1
Metals (mg/kg dry weight)											
Aluminum	2960	3480	6280	8800	3470	2850	17300	19100	2700	3350	18700
Antimony	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium	21.3	28	35	46.1	21.4	15.1	93.2	106	15.3	22.6	117
Beryllium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.52	<0.50	<0.50	0.59
Bismuth	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cadmium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium	1230	1350	2070	2550	1710	1340	4100	5130	1210	1850	4620
Chromium	10.3	13.1	18.6	24.9	10.5	9.2	52.2	56.8	9.4	10.5	58.8
Cobalt	<2.0	2.5	3.2	3.7	3.4	2.4	10.4	11.9	<2.0	3.1	13.8
Copper	2.3	5.7	6.9	8.8	9.1	7.1	13.8	17	4.7	7.8	19.1
Iron	7600	7890	9940	13000	7340	6590	26300	29100	7130	7950	29700
Lead	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium	4.9	6.7	10.2	12.2	6.4	4.8	26.8	29.4	5.9	6.5	33.3
Magnesium	1960	2270	3070	3910	1910	1590	10200	11400	1760	2250	11300
Manganese	54.8	60.6	70.9	92	64.8	51.1	286	362	47.7	67.2	330
Mercury	<0.0050	<0.0050	0.0099	0.016	0.0117	<0.0050	0.0107	0.0205	<0.0050	<0.0050	0.0079
Molybdenum	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel	<5.0	5	8.3	10.9	5.6	<5.0	23.3	27.3	<5.0	5.3	29.8
Phosphorus	214	243	489	582	295	269	402	512	310	393	584
Potassium	700	750	890	1130	480	360	3890	4380	510	760	4400
Selenium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	<200	240	<200	240	<200	<200	520	510	<200	<200	460
Strontium	6.74	7.77	14.7	19.3	7.84	5.5	23.2	29.5	5.22	7.1	24.7
Thallium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Titanium	407	403	415	514	280	240	1220	1330	255	325	1230
Uranium	0.281	0.412	0.807	0.923	0.482	0.319	1.06	1.26	0.396	0.547	1.75
Vanadium	19.8	20.7	21.7	27.3	16.7	15.3	58	63.5	16.7	17.6	64.6
Zinc	9.9	12.2	23.3	33.4	9.6	7.7	47.4	54.8	8.4	10.4	51.3

Notes:

(-) = not available

Appendix V4-7B. Summary of Chemical Soil Data Collected in 2010 and 2014

Sample ID	14 (10-20)	18 (0-10)	18 (10-20)	21 (0-10)	21 (10-20)	22 (0-10)	22 (10-20)	23 (0-10)	23 (10-20)	29 (0-10)	29 (10-20)
Date Sampled	15-Jul-10	15-Jul-10	15-Jul-10	16-Jul-10	16-Jul-10	16-Jul-10	16-Jul-10	16-Jul-10	16-Jul-10	18-Jul-10	18-Jul-10
ALS Sample ID	L933907-6	L933907-7	L933907-8	L933907-9	L933907-10	L933907-11	L933907-12	L933907-13	L933907-14	L933907-15	L933907-16
Physical Tests											
pH	6.32	6.27	6.42	6.46	6.42	6.46	7.52	6	6.15	5.62	6.14
Total Organic Carbon	1.47	0.97	0.85	1.52	2.92	0.98	0.17	1.78	2.61	5.89	3.34
Metals (mg/kg dry weig											
Aluminum	19200	9170	10900	22500	23200	8630	12800	21900	22500	12500	21300
Antimony	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Arsenic	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Barium	112	46.3	53.5	127	135	33.6	69.4	134	131	71	128
Beryllium	0.59	<0.50	<0.50	0.61	0.63	<0.50	<0.50	0.66	0.65	<0.50	0.56
Bismuth	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Cadmium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Calcium	4860	2560	3180	5470	5650	3100	3940	4320	5040	4000	5910
Chromium	60.9	29.2	33.1	65.3	65.8	34.5	42.7	65.6	67.2	35.8	59.4
Cobalt	13.5	5.4	5.9	13.6	14.4	9.2	11.3	12.9	14.7	8.7	13.7
Copper	17.8	10.5	12.4	24.8	27.7	22.6	35.1	26.2	25.6	15.3	27.6
Iron	30600	14600	16200	33100	33800	16800	22300	30900	32700	19900	32000
Lead	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Lithium	31.6	14.9	18.2	34.6	37.3	11.5	19	35.6	34.4	19	33.9
Magnesium	11300	5870	6740	13700	14200	6540	9770	13000	13200	8750	13900
Manganese	324	122	138	345	413	278	301	294	360	230	369
Mercury	0.0069	<0.0050	<0.0050	0.0078	0.0099	0.0067	<0.0050	0.0101	0.0106	0.0273	0.0084
Molybdenum	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Nickel	29.4	14.8	17.3	32.3	34.7	23.2	30.2	35	35.7	19.7	32
Phosphorus	600	448	529	446	531	284	442	490	578	385	538
Potassium	4500	2140	2660	5480	6020	1040	2630	4770	4710	3580	5200
Selenium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Silver	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Sodium	490	310	410	710	680	240	510	510	520	530	840
Strontium	27.1	15.3	20.4	30.2	33.3	11.1	17.3	26.8	29.1	24.2	35.3
Thallium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Tin	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Titanium	1330	660	757	1540	1490	523	744	1470	1510	928	1470
Uranium	1.64	0.841	0.961	1.57	1.59	0.342	0.416	2.23	2.05	1.35	1.94
Vanadium	66.6	32.9	37.2	72.7	72	35.2	46	71.7	73.3	43.6	69.9
Zinc	52	23.8	29	57.1	61.2	22.8	37.9	59	61	36.8	59.4

Notes:

(-) = not available

Appendix V4-7B. Summary of Chemical Soil Data Collected in 2010 and 2014

Sample ID	11 (0-10)	11 (10-20)	16 (0-10)	16 (10-20)	REFA-01	REFA-02	REFA-03	REFB-01	REFB-02	REFB-03	REFC-01
Date Sampled	18-Jul-10	18-Jul-10	18-Jul-10	18-Jul-10	12-AUG-14	12-AUG-14	12-AUG-14	12-AUG-14	12-AUG-14	12-AUG-14	13-AUG-14
ALS Sample ID	L933907-17	L933907-18	L933907-19	L933907-20	L1504993-1	L1504993-2	L1504993-3	L1504993-4	L1504993-5	L1504993-6	L1504993-7
Physical Tests											
pH	6.24	7.28	6.59	7.05	5.74	7.88	5.66	6.27	5.63	6.51	6.39
Total Organic Carbon	1.2	0.1	1.22	7.32	-	-	-	-	-	-	-
Metals (mg/kg dry weig											
Aluminum	3450	9250	2190	13600	7330	19600	5570	4750	9360	6780	17000
Antimony	<10	<10	<10	<10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	<5.0	<5.0	<5.0	<5.0	2.44	2.39	0.724	0.921	0.949	1.08	2.93
Barium	19.2	60.5	13.8	109	23.7	131	14.5	16	18.7	18.7	77
Beryllium	<0.50	<0.50	<0.50	<0.50	<0.20	0.64	<0.20	<0.20	<0.20	<0.20	0.44
Bismuth	<20	<20	<20	<20	<0.20	0.21	<0.20	<0.20	<0.20	<0.20	<0.20
Cadmium	<0.50	<0.50	<0.50	<0.50	<0.050	0.06	<0.050	<0.050	0.062	<0.050	<0.050
Calcium	1070	3580	1240	13800	2660	6160	2040	1510	1970	2620	5090
Chromium	8.5	30.5	7.6	41.8	17.1	54.4	11.1	9.93	17.2	21.8	43.6
Cobalt	2.2	8.3	2	9.3	4.35	11.9	4.1	4.28	5.85	7.47	10.5
Copper	6.2	19.4	5.7	40.3	4.33	25.2	9.86	9.95	10	11.6	16.8
Iron	7470	16200	6020	20400	12900	28500	10500	8460	15600	13200	25100
Lead	<30	<30	<30	<30	3.02	7.93	1.66	1.5	2.96	2.07	6.16
Lithium	9.1	16.9	4.4	24	11.8	35.7	12.1	9.6	22.3	15.4	24.5
Magnesium	1910	6360	1390	8730	4220	12600	3400	3260	4810	4480	7530
Manganese	48.2	211	39.7	234	126	348	101	96.3	157	237	253
Mercury	0.0064	<0.0050	<0.0050	0.0239	0.0066	<0.0050	0.006	<0.0050	0.0287	<0.0050	0.0101
Molybdenum	<4.0	<4.0	<4.0	<4.0	0.73	0.55	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	<5.0	18.9	<5.0	28.5	8.56	29.9	7.67	8.11	13.5	11.7	21.9
Phosphorus	177	303	288	521	254	714	299	249	282	398	414
Potassium	480	1910	370	2860	900	5830	510	590	650	520	2730
Selenium	<0.50	<0.50	<0.50	<0.50	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Silver	<2.0	<2.0	<2.0	<2.0	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Sodium	<200	320	<200	550	300	1450	150	<100	110	200	460
Strontium	6.93	13.7	4.56	30.9	14.6	39.7	9.37	7.65	11.7	13.7	34.8
Thallium	<1.0	<1.0	<1.0	<1.0	0.059	0.258	<0.050	<0.050	<0.050	<0.050	0.168
Tin	<5.0	<5.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Titanium	309	665	176	746	727	1490	481	348	746	695	1210
Uranium	0.379	1.06	0.345	1.3	0.495	1.69	0.329	0.326	0.417	0.909	1.44
Vanadium	16.8	35.6	14	41.3	32.5	62.3	24.1	17.5	31.3	28.6	53.3
Zinc	10.5	25.1	6.9	36.4	17.6	58.7	15.6	15.3	28.5	21.9	41.1

Notes:

(-) = not available

Appendix V4-7B. Summary of Chemical Soil Data Collected in 2010 and 2014

Sample ID	REFC-02	REFC-03	LSA-01	LSA-02	LSA-03	LSA-04	LSA-05	LSA-06	LSA-07A	LSA-07B	LSA-08
Date Sampled	13-AUG-14	13-AUG-14	12-AUG-14	13-AUG-14	13-AUG-14	16-AUG-14	15-AUG-14	15-AUG-14	15-AUG-14	15-AUG-14	15-AUG-14
ALS Sample ID	L1504993-8	L1504993-9	L1504993-10	L1504993-11	L1504993-12	L1504993-13	L1504993-14	L1504993-15	L1504993-16	L1504993-17	L1504993-18
Physical Tests											
pH	6.02	5.95	6.91	8.18	6.57	7.09	6.33	5.81	6.27	6.00	6.23
Total Organic Carbon	-	-	-	-	-	-	-	-	-	-	-
Metals (mg/kg dry weight)											
Aluminum	4620	5650	9480	27200	5590	12300	5550	4800	6960	5920	7070
Antimony	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	0.87	0.917	2.97	3.77	0.726	2.35	3.92	0.855	3.03	2.37	1.31
Barium	16.8	15.4	35.3	164	21.8	54.2	6.85	11.9	25	20.6	18.6
Beryllium	<0.20	<0.20	<0.20	0.79	<0.20	0.23	<0.20	<0.20	<0.20	<0.20	<0.20
Bismuth	<0.20	<0.20	<0.20	0.23	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Cadmium	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Calcium	2050	1860	3470	6790	1860	4720	1740	1530	2310	2060	2260
Chromium	13.6	17.3	40.9	77.8	14.3	39.7	15	13	18.2	20.7	16.4
Cobalt	4.46	4.99	9.92	15.9	4.71	11.1	5.72	5.11	7.28	5.87	6.87
Copper	4.84	11.4	23.5	41.2	6.47	23.8	27.1	12.2	16.5	12.9	33.4
Iron	9910	10700	19100	39800	10100	20900	12200	11400	14000	12000	13600
Lead	1.65	1.64	2.43	9.46	1.78	3.32	1.75	1.42	3.08	2.37	2.55
Lithium	8.5	10.8	14	50	10.9	16.7	7.7	6.6	11.8	11	10.2
Magnesium	2700	3730	6660	17900	3640	7490	3080	2870	4610	3910	3400
Manganese	105	125	283	413	123	327	145	132	175	127	112
Mercury	<0.0050	<0.0050	0.0084	0.0073	0.0074	0.0088	<0.0050	<0.0050	0.0148	0.0103	0.0079
Molybdenum	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	6.63	10.2	27.2	39.9	8.25	24	9.86	8.66	13.9	13	13.2
Phosphorus	350	282	242	363	227	170	113	161	351	277	131
Potassium	590	580	1050	7790	860	2160	160	260	640	640	370
Selenium	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Silver	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Sodium	140	120	240	1070	180	460	<100	120	<100	100	230
Strontium	11.6	9.21	14.9	32.3	9.66	21.5	7.52	7.71	10.1	8.33	12.6
Thallium	<0.050	<0.050	0.056	0.356	<0.050	0.114	<0.050	<0.050	<0.050	<0.050	<0.050
Tin	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Titanium	478	462	594	1760	480	950	479	414	417	432	539
Uranium	0.415	0.336	0.476	0.863	0.392	0.369	0.405	0.31	0.541	1.07	0.408
Vanadium	23	23.1	38.6	82	23.1	46.9	27.9	24.7	24.5	23.7	30
Zinc	13.3	16.8	34.3	80.5	16.4	34.2	13.4	14.3	21.7	19.4	16.5

Notes:

(-) = not available

Appendix V4-7B. Summary of Chemical Soil Data Collected in 2010 and 2014

Sample ID	LSA-09A	LSA-09B	LSA-10	LSA-11	LSA-12	LSA-13A	LSA-13B	LSA-14	LSA-15	LSA-16	LSA-17
Date Sampled	14-AUG-14	14-AUG-14	15-AUG-14	15-AUG-14	14-AUG-14	16-AUG-14	16-AUG-14	16-AUG-14	15-AUG-14	16-AUG-14	14-AUG-14
ALS Sample ID	L1504993-19	L1504993-20	L1504993-21	L1504993-22	L1504993-23	L1504993-24	L1504993-25	L1504993-26	L1504993-27	L1504993-28	L1504993-29
Physical Tests											
pH	7.18	7.20	6.20	6.03	6.50	6.07	5.93	5.73	6.15	8.05	6.28
Total Organic Carbon	-	-	-	-	-	-	-	-	-	-	-
Metals (mg/kg dry weight)											
Aluminum	3480	3920	6590	18600	11200	20100	17300	8100	13900	13300	3220
Antimony	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic	0.999	1.01	1.11	3.92	1.74	3.04	2.96	1.87	2.78	7.17	0.756
Barium	14.6	18.2	17.2	102	71.2	108	89	19.8	71	47.9	19.1
Beryllium	<0.20	<0.20	<0.20	0.68	0.33	0.56	0.52	<0.20	0.41	0.24	<0.20
Bismuth	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Cadmium	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Calcium	2560	2540	1730	5230	4210	4160	3900	2370	3550	4110	1850
Chromium	12.2	13.1	24.6	49.2	30.8	63.4	54.4	36.9	44.1	44.9	10.9
Cobalt	2.84	3.1	6.4	9.2	7.65	12	10.3	8.56	8.86	14.9	2.87
Copper	4.06	4.86	11.4	21.3	19	26.5	23.8	20.1	16.8	40.6	6.13
Iron	8150	8650	13700	23700	16700	29200	26000	15000	20600	25900	7520
Lead	2.17	2.19	2.15	7.5	4.79	7.88	7.25	2.02	5.51	2.97	1.91
Lithium	5.8	5.7	9.5	31.2	16.9	30.7	27.9	10.6	20.4	19.5	6.2
Magnesium	1940	2160	4150	9020	5500	10700	9550	5520	7180	9120	1700
Manganese	91.6	92.2	149	199	210	250	218	213	207	394	67
Mercury	<0.0050	<0.0050	0.0068	0.0173	0.0054	0.0116	0.0103	<0.0050	0.012	0.006	<0.0050
Molybdenum	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Nickel	5.43	5.86	13.5	26.7	15.9	32.9	27.9	24.1	24.7	33.6	4.94
Phosphorus	429	364	160	391	289	392	390	137	182	357	289
Potassium	610	790	310	3840	1990	3950	3190	380	2180	1400	600
Selenium	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Silver	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Sodium	220	230	140	580	410	550	430	300	450	320	150
Strontium	12.4	13.3	9.07	51.7	21.6	24.1	22	10.1	19.7	13.5	8.99
Thallium	<0.050	<0.050	<0.050	0.181	0.127	0.208	0.214	<0.050	0.147	0.093	<0.050
Tin	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Titanium	458	477	563	986	996	1390	1190	635	962	826	396
Uranium	0.678	0.641	0.349	1.06	0.782	1.75	1.6	0.302	1.06	0.485	0.517
Vanadium	19	20	28.7	48.6	37.2	65.2	57.7	35.3	46.2	56	17.1
Zinc	8.9	10.3	15.5	40	28.7	56.4	50.3	22.5	32.9	41.4	9.1

Notes:

(-) = not available

Appendix V4-7B. Summary of Chemical Soil Data Collected in 2010 and 2014

Sample ID	LSA-18	LSA-19	LSA-20	LSA-21
Date Sampled	14-AUG-14	14-AUG-14	13-AUG-14	14-AUG-14
ALS Sample ID	L1504993-30	L1504993-31	L1504993-32	L1504993-33
Physical Tests				
pH	6.47	6.77	6.87	5.90
Total Organic Carbon	-	-	-	-
Metals (mg/kg dry weight)				
Aluminum	2570	6590	12100	4760
Antimony	<0.10	<0.10	<0.10	<0.10
Arsenic	0.645	1.83	1.37	0.963
Barium	14.1	19.4	61.8	16
Beryllium	<0.20	<0.20	0.3	<0.20
Bismuth	<0.20	<0.20	<0.20	<0.20
Cadmium	<0.050	<0.050	<0.050	<0.050
Calcium	1900	1830	5730	2220
Chromium	9.09	19.6	31.8	27.3
Cobalt	2.25	9.83	7.99	5.83
Copper	8.15	41.7	13.2	6.4
Iron	7010	12700	18200	10800
Lead	1.59	2.4	3.77	1.53
Lithium	<5.0	8.5	20.9	5.8
Magnesium	1260	3810	7010	3280
Manganese	49.6	190	224	149
Mercury	<0.0050	0.0061	0.0091	0.0088
Molybdenum	<0.50	<0.50	<0.50	<0.50
Nickel	3.81	12.8	17.6	13
Phosphorus	325	128	279	192
Potassium	280	350	2090	310
Selenium	<0.20	<0.20	<0.20	<0.20
Silver	<0.10	<0.10	<0.10	<0.10
Sodium	140	180	390	110
Strontium	7.88	8.4	30.5	7.86
Thallium	<0.050	<0.050	0.12	<0.050
Tin	<2.0	<2.0	<2.0	<2.0
Titanium	320	505	851	366
Uranium	0.456	0.399	0.449	0.314
Vanadium	17.2	27.8	39.6	26.4
Zinc	6.4	17.5	37.6	15.8

Notes:

(-) = not available